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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/933,753	08/22/2001	Alpha Du	3722-0111P	6501

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER

DOWLING, WILLIAM C

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/933,753	Applicant(s) DU, ALPHA	
	Examiner William C. Dowling	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 6 is/are allowed.
- 6) ☒ Claim(s) 1,2,7 and 9 is/are rejected.
- 7) ☒ Claim(s) 3,4,8,10 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 8/22/01 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>82101</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 9 is rejected under 35 U.S.C. 102(e) as being anticipated by Aoto et al.

Aoto et al. discloses a liquid crystal projector comprising:

a beamsplitter (3) for separating light of a first color from the lights of second and third colors;

a first reflective LCD (DB) for rotating the plane of polarization of the first color supplied from a first PBS (4);

second and third reflective LCD's (DG, DR) for rotating the plane of polarization of second and third color lights being supplied lights from a second PBS (9);

a first color selector (6) for rotating the polarization of one of the second and third color lights;

a dichroic prism (5) for outputting the polarized lights from the three LCD's.

3. Claim 7 is rejected under 35 U.S.C. 102(e) as being anticipated by Chuang et al.

Chuang (6,384,972) discloses a liquid crystal projector comprising:

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a beamsplitter (6) for separating light of a first color from the lights of second and third colors;

a first reflective LCD (91) for rotating the plane of polarization of the first color supplied from a first PBS (71);

second and third reflective LCD's (92, 93) for rotating the plane of polarization of second and third color lights being supplied lights from a second PBS (72);

a first color selector (981) for rotating the polarization of one of the second and third color lights;

a second color selector (82) for rotating the polarization of one of the second and third color lights;

a third PBS (73) for outputting all the lights to a projecting lens (40).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurematsu et al.

Kurematsu et al. (5,267,029) discloses a liquid crystal projector comprising:

a beamsplitting device (7, 11) for supplying s polarized lights of red, green, and blue;

a first transmission liquid crystal panel (8) for modulating light of the first color (red) by rotating the polarization;

a second transmission liquid crystal panel (6) for modulating light of the second color (green) by rotating the polarization;

a third transmission liquid crystal panel (8) for modulating light of the third color (blue) by rotating the polarization; and

a beam combining mechanism for combining the modulated colors comprising:

a dichroic mirror for combining lights of two colors;

a reflective mirror for redirecting light of a third color;

a PBS for combining all three color lights.

Kurematsu et al. does not teach the use of a dichroic prism rather than a dichroic mirror at (15), the use of a PBS for reflective mirror (14), or the particular order of color combination.

Figure 1 of Kurematsu et al. teach the use of a PBS (3) for redirection along an optical path similar to that in figure 2. It would have been obvious to one skilled in the art at the time of the invention to substitute a PBS for a reflection mirror in order to eliminate any residual polarization components. It further would have been obvious to one skilled in the art to substitute a dichroic prism for the dichroic mirror (15) because both are known equivalent structures with which to reflect certain color components while transmitting others, as seen by the use of dichroic prism (31) in figure 5. The particular order of color separation would have been obvious to one skilled in the art because the structure will operate with any order of separation.

Allowable Subject Matter

6. Claims 3-4, 8, 10-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

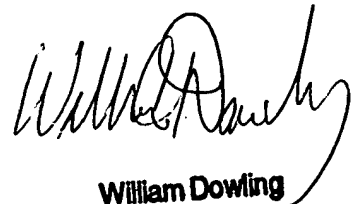
7. Claims 5-6 are allowed.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to William C. Dowling whose telephone number is 571-272-2116. The examiner can normally be reached on MON-TUES, THURS-FRI.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-1750. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

wcd


William Dowling
Primary Examiner